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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/452,162      | 12/01/1999  | KAZUMASA OHSUMI      | 1185.1050/JD        | 9955             |

21171 7590 12/19/2002

STAAS & HALSEY LLP  
700 11TH STREET, NW  
SUITE 500  
WASHINGTON, DC 20001

[REDACTED] EXAMINER

CHUNG, DAVID Y

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2871     |              |

DATE MAILED: 12/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |   |
|------------------------------|------------------------|---|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b>   |
|                              | 09/452,162             | OHSUMI, KAZUMASA  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>   |
|                              | David Chung            | 2871  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 27 September 2002.

2a) This action is **FINAL**.                  2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-34 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-4, 11-14, 21-25, 31 and 32 is/are rejected.

7) Claim(s) 5-10, 15-20, 25-30, 33 and 34 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

|   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4, 11-14 and 21-24 rejected under 35 U.S.C. 102(b) as being clearly anticipated by Beeson et al. (U.S. 5,396,350).

As to claim 1, Beeson et al. discloses an optical illumination system comprising a waveguide with an array of microprisms attached to one face. Note in figure 2, waveguide 6 comprising light incident face 7, light emission face 30, and microprisms 28. The microprisms of figure 3D are structurally the same as the ridges claimed by applicant and are arranged disconnectedly at intervals with interstitial regions 36 separating them. Each microprism is inclined away from the light incident face 7 at an angle and has one sidewall 34 facing the light incident face and one sidewall 33 opposite the light incident face.

Art Unit: \*\*\*

As to claim 2, Beeson et al. teaches that the desired value for tilt angle 72 ranges from 25 degrees to 40 degrees. See column 7, lines 10 – 15. This disclosed range is within the range claimed by applicant.

As to claims 3 and 4, it is clear from figure 2 that both sidewalls 33 and 34 of microprism 28 are inclined so as to increase in distance from light incident face 7.

As to claim 11, Beeson et al. discloses an optical illumination system comprising a waveguide with an array of microprisms attached to one face. Note in figure 2, waveguide 6 comprising light incident face 7, light emission face 30, and microprisms 28. The microprisms of figure 3D are structurally the same as the ridges claimed by applicant and are arranged disconnectedly at intervals with interstitial regions 36 separating them. Each microprism is inclined away from the light incident face 7 at an angle and has one sidewall 34 facing the light incident face and one sidewall 33 opposite the light incident face. Illumination is provided by light source 14 arranged beside waveguide 6.

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As to claim 12, Beeson et al. teaches that the desired value for tilt angle 72 ranges from 25 degrees to 40 degrees. See column 7, lines 10 – 15. This disclosed range is within the range claimed by applicant.

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As to claims 13 and 14, it is clear from figure 2 that both sidewalls 33 and 34 of microprism 28 are inclined so as to increase in distance from light incident face 7.

As to claim 21, Beeson et al. discloses an optical illumination system comprising a waveguide with an array of microprisms attached to one face. Note in figure 2, waveguide 6 comprising light incident face 7, light emission face 30, and microprisms 28. The microprisms of figure 3D are structurally the same as the ridges claimed by applicant and are arranged disconnectedly at intervals with interstitial regions 36 separating them. Each microprism is inclined away from the light incident face 7 at an angle and has one sidewall 34 facing the light incident face and one sidewall 33 opposite the light incident face. Illumination is provided by light source 14 arranged beside waveguide 6. Figure 1 shows a liquid crystal display comprising the illumination system of figure 2.

As to claim 22, Beeson et al. teaches that the desired value for tilt angle 72 ranges from 25 degrees to 40 degrees. See column 7, lines 10 – 15. This disclosed range is within the range claimed by applicant.

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As to claims 23 and 24, it is clear from figure 2 that both sidewalls 33 and 34 of microprism 28 are inclined so as to increase in distance from light incident face 7.

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 31 and 32 rejected under 35 U.S.C. 103(a) as being unpatentable over Beeson et al. (U.S. 5,396,350).

Beeson et al. discloses a liquid crystal display with an illumination system arranged for backlighting. However, it was well known and obvious that the illumination system of Beeson et al. could be used for front lighting by providing it on the front of the display and adding a reflector to the back of the display. Furthermore, reflective displays were well known and obvious for using light more efficiently than normal transmissive displays. Therefore, it would have been obvious to those of ordinary skill in the art at the time of invention to create a reflective display by arranging the illumination system of Benson et al. for front lighting in order to obtain a brighter display.

***Allowable Subject Matter***

Claims 5-10, 15-20, 25-30, 33 and 34 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Chung whose telephone number is (703) 306-0155. The examiner can normally be reached on Monday-Friday from 8:30 am to 5:00 pm.

David Chung  
GAU 2871  
12/09/02

*[Handwritten Signature]*  
ROBERT H. KIM  
PRIMARY PATENT EXAMINER  
SUPPLY & TECHNOLOGY CENTER 2800  
TUE 10:00 AM - 1:00 PM